

UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

ACQIS LLC,
a Texas limited liability company,

Plaintiff,

v.

FUJITSU LIMITED, a Japanese
corporation,

Defendant.

Civil Action No. 6:23-cv-00878-ADA

JURY TRIAL DEMANDED

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff ACQIS LLC (“Plaintiff” or “ACQIS”), by its attorneys, hereby alleges patent infringement against Defendant Fujitsu Limited (“Defendant” or “Fujitsu”) as follows:

INTRODUCTION

1. This is an action for patent infringement under the United States Patent Laws, 35 U.S.C. § 1 *et seq.* Beginning in the late 1990s, Dr. William Chu founded ACQIS and invented a variety of pioneering computer technologies that employed serial transmission along low voltage differential signal (LVDS) channels to dramatically increase the speed at which data can be transmitted while also reducing power consumption and noise. Dr. Chu’s inventions have become foundational in the computer industry, and are found in a variety of data transmission systems, including PCI Express (PCIe) and/or USB 3.x¹ transactions.

¹ As used herein, “USB 3.x” refers to USB 3.0 and subsequent versions, including USB 3.1, USB 3.2, and any other subsequent versions.

2. Fujitsu has infringed the following patents owned by ACQIS: U.S. Patent Nos. 9,529,768 (“’768 patent”), 9,703,750 (“’750 patent”), 8,756,359 (“’359 patent”), 8,977,797 (“’797 patent”), and RE44,654 (“’654 patent”) (collectively, the “ACQIS Patents”). Copies of the ACQIS Patents are attached to this Complaint as Exhibits 1-5.

3. Specifically, Fujitsu has infringed the ACQIS Patents through: (1) the manufacture, use, offering for sale, and/or sale in the United States, and/or the importation into the United States, of infringing computer products; (2) the practice of claimed methods of the ACQIS Patents by manufacturing, using and/or testing computer products in the United States; (3) the importation into the United States of computer products made abroad using ACQIS’s patented processes; and (4) the inducement of third parties to engage in the activity described above with knowledge of the ACQIS Patents and of the third parties’ infringing actions.

4. ACQIS seeks damages and other relief for Defendant’s infringement of the ACQIS Patents. ACQIS is entitled to past damages because, without limitation, it has provided actual notice to Defendant and for infringement of method claims which do not require marking.

THE PARTIES AND RELATED ENTITIES

5. Plaintiff ACQIS LLC, is a limited liability company organized and existing under the laws of the State of Texas, with offices at 411 Interchange Street, McKinney, Texas 75071. A related entity, ACQIS Technology, Inc., is a corporation organized under the laws of the State of Delaware, having its principal place of business at 1503 Grant Road, Suite 100, Mountain View, California 94040. ACQIS LLC is operated from California, where its President, Dr. William Chu, resides. Dr. Chu is also the Chief Executive Officer of ACQIS Technology, Inc.

6. Fujitsu is a Japanese company with its principal place of business at Shiodome City Center, 1-5-2, Higashi-Shimbashi, Minato-ku, Tokyo 105-7123, Japan.²

7. On information and belief, Fujitsu conducts business relating to the computer products accused of infringement in this Complaint directly or, in the alternative, by exerting such direction and control over its directly and indirectly owned subsidiaries that its subsidiaries act as its agents and/or alter ego, such that the actions of its subsidiaries are attributable to Fujitsu.

8. On information and belief, Fujitsu has a history and culture of maintaining dominance and control over its subsidiaries by seeding executive teams (including those in the United States) with individuals jointly affiliated with Fujitsu. For example, Mr. Shingo Mizuno is both Corporate Executive Officer & EVP, Vice Head of System Platform Business at Fujitsu and President & CEO of Fujitsu Networks, Inc.³

9. Likewise, as described in its 2023 Integrated Report:

(a) Fujitsu ensures it sends its own employees to subsidiaries as directors in order to maintain central control: “All listed subsidiaries are ensured their independence by appointing independent directors and directors **dispatched from the Company** to help maximize their corporate value.”⁴

(b) Fujitsu operates the Fujitsu conglomerate as a single entity: “Together with centers in Japan, the United States, Canada, the United Kingdom, Spain, and China, the Group has over 850 R&D personnel working in eight countries around the world, establishing a global R&D structure that leverages the strengths of each center.”⁵

² Fujitsu Limited 2023 Integrated Report, p. 103.

³ <https://www.fujitsu.com/us/products/network/about-us/leadership-team.html>; <https://www.fujitsu.com/global/about/corporate/management/>.

⁴ Fujitsu Limited 2023 Integrated Report, p. 87 (emphasis added).

⁵ *Id.*, p. 39; *see also id.* at, e.g., p. 37 (structuring operations to share certain services).

- (c) Fujitsu appoints representatives in certain of subsidiaries' departments across the conglomerate: "We have appointed an Economic Security Representative in each relevant department to identify potential risks in response to environmental changes and promote comprehensive collaborative activities to ensure business continuity."⁶

10. Fujitsu's Corporate Governance Policy also reflects Fujitsu's dominance and control of Fujitsu over its subsidiaries, which describes Fujitsu's Board of Directors' oversight of, and control over, the conglomerate:

- (a) "The Board of Directors sets the purpose as well as the values of the company and prompts the Management Executives to promote the practice and penetration of the Fujitsu Way, which embraces the aforementioned purpose and values, within the Fujitsu Group."⁷
- (b) "The Board of Directors sets the policy on the internal control system and performs the oversight over its operation."⁸
- (c) "For compliance with the rules mentioned in the preceding 3 items, the Board of Directors requests periodic reports to the Board of Directors by Executive Directors concerning the business execution and the operation status of the internal control system in the Fujitsu Group."⁹

11. Fujitsu holds the Fujitsu conglomerate out publicly as a single entity or collective, such as by consistently referring to the conglomerate as "Fujitsu" or "the Group."¹⁰

⁶ *Id.*, p. 91.

⁷ Fujitsu Limited December 23, 2021, Corporate Governance Policy, p. 5.

⁸ *Id.*

⁹ *Id.*

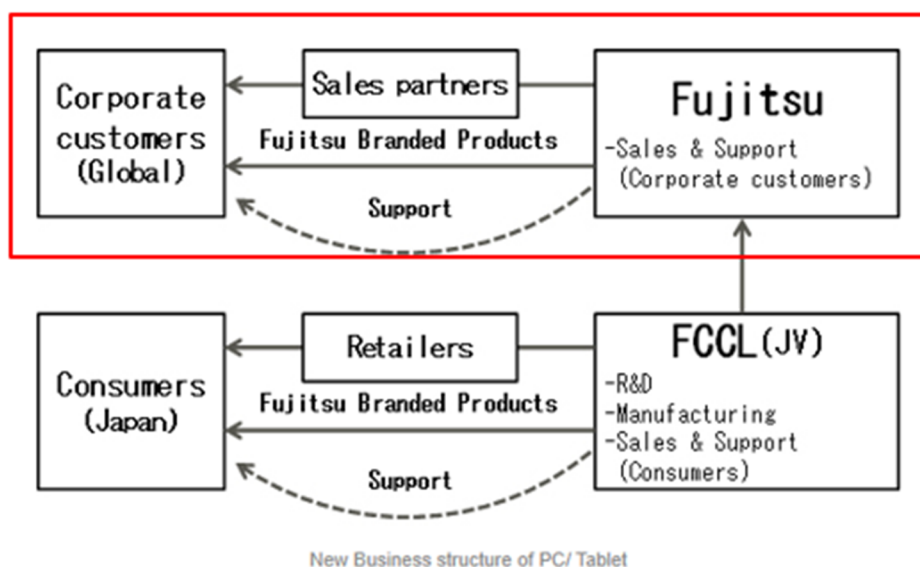
¹⁰ *See, e.g., generally* Fujitsu Limited 2023 Integrated Report; <https://www.fujitsu.com/global/about/corporate/ceo-message.html>.

12. Fujitsu owns and controls the website www.fujitsu.com, which contains corporate, contact, and other information for Fujitsu subsidiaries, such as Fujitsu North America, Inc., Fujitsu Frontech Limited, Fujitsu Frontech North America, Inc., and Fujitsu Electronics America, Inc.¹¹ Fujitsu maintains an online shop that offers to sell and sells Fujitsu products in the United States, and Fujitsu also directs consumers in the United States to Fujitsu resellers.¹² Through at least these venues, Fujitsu has offered to sell and has sold products accused of infringing the ACQIS Patents in the United States, the State of Texas, and within this District, during the times relevant to this Complaint.

13. Fujitsu has sold products accused of infringement in this Complaint to other Fujitsu entities, such as U.S. entities Fujitsu North America, Inc., Fujitsu Frontech North America, Inc., and Fujitsu Electronics America, Inc., specifically for the resale of those products in the United States, including both in the State of Texas and this District. For example, prior to a restructuring of Fujitsu's global PC business (which on information and belief was limited to consumer PC products and did not impact Fujitsu's server business operations), Fujitsu sold, offered for sale, and provided service on computer products accused of infringement in this Complaint directly to customers and resellers in the United States in the same manner following the restructuring.

¹¹ *E.g.*, <https://www.fujitsu.com/us/about/local/corporate/subsidiaries/fai/>;
<https://www.fujitsu.com/jp/group/frontech/en/>;
<https://www.fujitsu.com/us/about/local/corporate/subsidiaries/ffna/>;
<https://www.fujitsu.com/us/about/local/corporate/subsidiaries/fea/>.

¹² *See* <https://www.fujitsu.com/us/about/resources/shop/>.



<https://www.fujitsu.com/global/about/resources/news/press-releases/2017/1102-01.html>. That restructuring was effected in May 2018.¹³ On information and belief, Fujitsu presently operates in this manner, including by selling and offering to sell Fujitsu-branded products to customers in this District which includes products that do not originate from Fujitsu Client Computing Limited (“FCCL”).

14. Publicly available import data¹⁴ indicates that Fujitsu Frontech North America Inc. has imported into the United States computer products.¹⁵ On information and belief, Fujitsu, Fujitsu Frontech North America Inc., Fujitsu North America Inc., and/or other Fujitsu entities have imported in the United States products accused of infringement in this Complaint prior to the ACQIS Patents’ expiration.

¹³<https://www.fujitsu.com/global/documents/about/ir/library/integratedrep/IntegratedReport2018-all.pdf>, p. 17

¹⁴ U.S. Import Records, available from Import Genius.

¹⁵ See, e.g., U.S. Import Bills of Lading Nos. PYMNSHA221190742, PYMNSHA220819081, PYMNSHA220776837.

15. Fujitsu's subsidiaries' revenue are rolled up to, and included in Fujitsu's consolidated financials.¹⁶ Fujitsu derives substantial revenue and profit from its subsidiaries' activities, including Fujitsu North America, Inc., Fujitsu Frontech Limited, Fujitsu Frontech North America, Inc., and Fujitsu Electronics America, Inc.

JURISDICTION AND VENUE

16. This is an action for patent infringement under the United States patent laws, 35 U.S.C. § 101 *et seq.*

17. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

18. This Court has personal jurisdiction over Fujitsu consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute.

19. As alleged in paragraphs 6-15 above, Fujitsu has purposefully manufactured and/or distributed computer products that infringe the ACQIS Patents, or that were made abroad using patented processes claimed in the ACQIS Patents, through established distribution channels with the expectation that those products would be sold in the United States, State of Texas, and this District.

20. Further, Fujitsu has (itself and/or through the activities of subsidiaries, affiliates, or intermediaries) committed acts of patent infringement in the United States, State of Texas, and this District, including by making, using, offering to sell, and/or selling infringing computer products in the United States, State of Texas and this District; importing infringing computer products and/or computer products made abroad using ACQIS's patented processes into the

¹⁶ *See, e.g.,* https://pr.fujitsu.com/jp/ir/finance/2022/pdf/en/all.pdf?_gl=1*1hf7hab*_ga*MjM2MjE2NTYyLjE3MDEzMDE1MTE.*_ga_GNHKR21PZP*MTcwMjc2NTQ5Mi4xNS4xLjE3MDI3NjU1Mzg1MC4wLjA.

United States for sale in the State of Texas and this District; and/or inducing others to commit acts of patent infringement in the United States, State of Texas, and this District.

21. Accordingly, Fujitsu has established minimum contacts within Texas and purposefully availed itself of the benefits of Texas, and the exercise of personal jurisdiction over Fujitsu would not offend traditional notions of fair play and substantial justice. In addition, or in the alternative, this Court has personal jurisdiction over Fujitsu pursuant to Federal Rule of Civil Procedure 4(k)(2). *See, e.g., ACQIS LLC v. Lenovo Group Ltd. et al.*, 572 F. Supp. 3d 291, 302-307 (W.D. Tex. Nov. 16, 2021) (denying motion to dismiss for lack of personal jurisdiction as to served defendants).

22. Venue is proper in this District pursuant to 28 U.S.C. § 1391(c)(3) because Defendant does not reside in the United States and thus may be sued in any judicial district in the United States pursuant to 28 U.S.C. § 1391(c)(3).

23. Venue is also appropriate because the patents asserted in this case have been previously asserted in cases before this Court. *See, e.g., ACQIS LLC v. Quanta Computer, Inc.*, 6:23-cv-265. Certain of these patents were the subject of a trial scheduled held in this District in March 2024, resulting in a jury verdict of infringement and award of damages to ACQIS. *ACQIS, LLC v. ASUSTeK*, No. 6:2020-cv-966. It would serve the interests of judicial efficiency for this case to be litigated in this District. *See ACQIS LLC v. MiTac Computing Tech. Corp.*, No. W-20-cv-00962-ADA, 2021 U.S. Dist. LEXIS 197938, 2021 WL 4805431 (W.D. Tex., Oct. 14, 2021) (describing four pending cases and denying motion to transfer venue).

FACTUAL BACKGROUND

Dr. Chu and the ACQIS Patents

24. Dr. William Chu has been a prolific innovator in the computing industry since the 1970s.

25. In 1976, Dr. Chu received his Ph.D. in Electrical Engineering from the University of California, Berkeley. Dr. Chu then began working in semiconductor design for American Microsystems, Inc. from 1976 to 1977, and then for Zilog, Inc. from 1977 to 1982.

26. In 1982, Dr. Chu founded Verticom, Inc., which developed innovative technologies relating to video transmission over telephone lines. Verticom also developed graphics products for the PC computer-aided design (CAD) market. Verticom's success resulted in its stock being listed on the NASDAQ exchange in 1987. In 1988, Verticom was acquired by Western Digital Imaging, Inc.

27. Dr. Chu served as Vice President of Engineering for Western Digital from 1988 to 1991, overseeing a development team in the desktop and portable graphics chip division. In the course of his work at Western Digital, Dr. Chu in 1988 started the company's portable graphics chip business, which became #1 in the portable graphics chip market by 1991. Dr. Chu also led Western Digital to achieve the #1 market share in the PC graphics market in 1990.

28. After Western Digital, Dr. Chu worked for Acumos, Inc. from 1991 to 1992 as a Vice President managing engineering for computer graphics chip development. Acumos was acquired by Cirrus Logic, Inc. in 1992.

29. Dr. Chu then worked for Cirrus Logic from 1992 to 1997, first as a General Manager in the Desktop Graphics Division and later as Co-President of the Graphics Chip Business Unit.

During Dr. Chu's time at Cirrus Logic, the company achieved #1 market share in the PC graphics chip market.

30. In 1998, Dr. Chu founded ACQIS Technology, Inc. to pursue his vision of developing a small, portable computer module that could be interchangeably connected with a variety of different peripheral consoles. In the course of this development effort, Dr. Chu recognized the need for a better interconnection between the core computing module and a peripheral console. Such interconnections traditionally conveyed peripheral component interconnect (PCI) bus transactions in parallel using a large number of signal channels and connector pins. This made it difficult to employ LVDS channels, which are more "cable friendly," consume less power, and generate less noise. Dr. Chu wanted to develop an interconnection system that was scalable, used connectors with low pin counts, was power-efficient, high performing, and easily extendible for future computing needs and technologies. This development work resulted in a large family of patents now owned by ACQIS, which disclose and claim a variety of pioneering inventions relating to improved, high-performance and low-power consuming interconnection technologies for computer modules.

31. After several decades in the industry, Dr. Chu is now a named inventor of over forty U.S. Patents.

32. Among the patent portfolio covering Dr. Chu's inventions and owned by ACQIS are the ACQIS Patents asserted in this case.

33. The '768 patent, entitled "Computer System Including CPU or Peripheral Bridge Directly Connected to a Low Voltage Differential Signal Channel that Communicates Serial Bits of a Peripheral Component Interconnect Bus Transaction in Opposite Directions," was duly and legally issued on December 27, 2016, from a patent application filed March 13, 2014, with

William W.Y. Chu as the sole named inventor. The '768 patent claims priority to U.S. Provisional Patent Application No. 60/134,122, filed on May 14, 1999.

34. The '750 patent, entitled "Computer System Including CPU or Peripheral Bridge Directly Connected to a Low Voltage Differential Signal Channel that Communicates Serial Bits of a Peripheral Component Interconnect Bus Transaction in Opposite Directions," was duly and legally issued on July 11, 2017, from a patent application filed October 9, 2014, with William W.Y. Chu as the sole named inventor. The '750 patent claims priority to U.S. Provisional Patent Application No. 60/134,122, filed on May 14, 1999.

35. The '359 patent, entitled "Computer System Including CPU or Peripheral Bridge to Communicate Serial Bits of Peripheral Component Interconnect Bus Transaction and Low Voltage Differential Signal Channel to Convey the Serial Bits," was duly and legally issued on June 17, 2014, from a patent application filed January 17, 2013, with William W.Y. Chu as the sole named inventor. The '359 patent claims priority to U.S. Provisional Patent Application No. 60/134,122, filed on May 14, 1999.

36. The '977 patent, entitled "Computer System Including CPU or Peripheral Bridge to Communicate Serial Bits of Peripheral Component Interconnect Bus Transaction and Low Voltage Differential Signal Channel to Convey the Serial Bits," was duly and legally issued on January 7, 2014, from a patent application filed July 27, 2012, with William W.Y. Chu as the sole named inventor. The '977 patent claims priority to U.S. Provisional Patent Application No. 60/134,122, filed on May 14, 1999.

37. The '739 patent, entitled "Data Security Method and Device for Computer Modules," was duly and legally issued on January 28, 2014, from a patent application filed May 21, 2013,

with William W.Y. Chu as the sole named inventor. The '739 patent claims priority to U.S. Patent Application No. 11/056,604, filed on February 10, 2005.

38. The '797 patent, entitled "Method of Improving Peripheral Component Interface Communications Utilizing a Low Voltage Differential Signal Channel," was duly and legally issued on March 10, 2015, from a patent application filed October 10, 2012, with William W.Y. Chu as the sole named inventor. The '797 patent claims priority to U.S. Provisional Patent Application No. 60/134,122, filed on May 14, 1999.

39. The '769 patent, entitled "Computer System Including CPU or Peripheral Bridge Directly Connected to a Low Voltage Differential Signal Channel that Communicates Serial Bits of a Peripheral Component Interconnect Bus Transaction In Opposite Directions," was duly and legally issued on December 27, 2016, from a patent application filed February 26, 2016, with William W.Y. Chu as the sole named inventor. The '769 patent claims priority to U.S. Patent Application No. 11/097,694, filed on March 31, 2005.

40. The '140 patent, entitled "Data Security Method and Device for Computer Modules," was duly and legally issued on September 16, 2014, from a reissue application filed December 17, 2013, with William W.Y. Chu as the sole named inventor. The '140 patent is a reissue of U.S. Patent No. 6,643,777, which issued on November 4, 2003, from a patent application filed May 14, 1999. The '140 patent claims priority to U.S. Patent Application No. 09/312,199, filed on May 14, 1999.

41. The '654 patent, entitled "Data Security Method and Device for Computer Modules," was duly and legally issued on December 17, 2013, from a reissue application filed October 10, 2012, with William W.Y. Chu as the sole named inventor. The '654 patent is a reissue of U.S. Patent No. 6,643,777, which issued on November 4, 2003, from a patent application filed May 14,

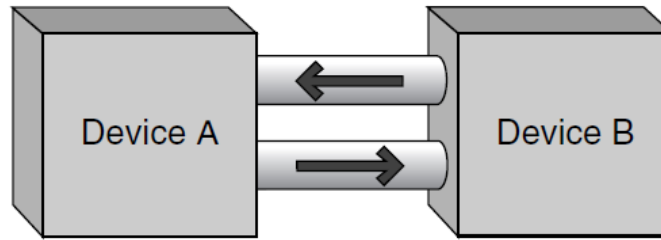
1999. The '654 patent claims priority to U.S. Patent Application No. 09/312,199, filed on May 14, 1999.

42. The '436 patent, entitled "Computer System Including Peripheral Bridge to Communicate Serial Bits of Peripheral Component Interconnect Bus Transaction and Low Voltage Differential Signal Channel to Convey the Serial Bits," was duly and legally issued on July 31, 2012, from a continuation of application No. 12/504,534, filed on Jul. 16, 2009, with William W.Y. Chu as the sole named inventor. The '797 patent claims priority to U.S. Provisional Patent Application No. 60/134,122, filed on May 14, 1999.

43. The inventions claimed in the ACQIS Patents enable computers to operate faster with better efficiency through faster interconnections including between the core computing power modules and any connected consoles.

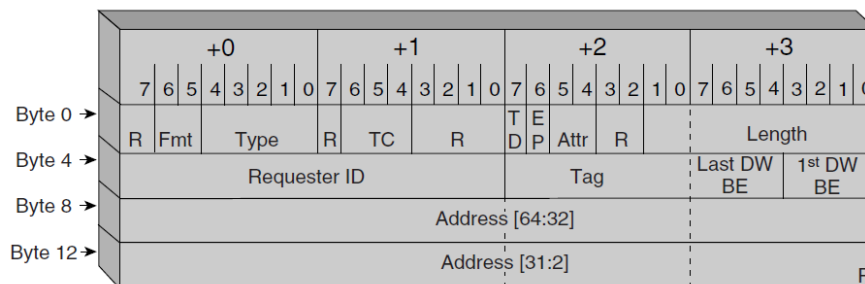
44. The claims in the ACQIS Patents generally relate to computers and computer systems that employ CPUs coupled to LVDS channels that convey various types of data (*e.g.*, PCI bus transactions, USB 3.x data, and/or digital video data) in a serial bit stream using pairs of unidirectional channels to convey the data in opposite directions.

45. Over the years, Dr. Chu's inventive developments have become more and more widely used in computing technologies. One prime example is the computing industry's adoption of PCI Express, which post-dates Dr. Chu's inventions but embodies Dr. Chu's patented interconnection invention by using "high speed, low voltage, differential serial pathway for two devices ... to communicate simultaneously by implementing dual unidirectional paths between two devices[.]"



See Introduction to PCI Express – A Hardware and Software Developers Guide, Intel Press (2003), at 1-2 (“There are certain times in the evolution of technology that serve as inflection points that forever change the course of events. For the computing sector and communications, the adoption of PCI Express, a groundbreaking new general input/output architecture, will serve as one of these inflection points.”).

46. PCI Express connections transmit data packets known as transaction layer packets (TLP) that include data bits, address bits, and byte enable (BE) information bits.



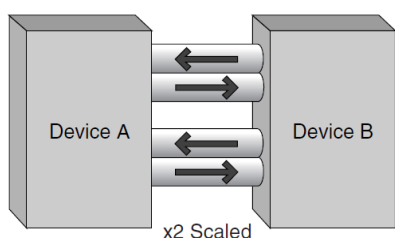
Id. at 93-114.

47. PCI Express “establishes a unique divergence from historical PCI evolutions through a layered architecture improving serviceability and scalability as well as easing software transitions through backward compatibility.”¹⁷ The compatibility of PCI Express with PCI can be further explained as follows: “PCI Express employs the same usage model and load-store communication model as PCI and PCI-X. It supports familiar transactions such as memory

¹⁷ Adam H. Wilen, Justin P. Schade, Ron Thornburg. *INTRODUCTION TO PCI EXPRESS - A HARDWARE AND SOFTWARE DEVELOPER’S GUIDE*, Intel Press, 2003, pages 51-52.

read/write, IO read/write and configuration read/write transactions. The memory, IO, and configuration address space model is the same as PCI and PCI-X address spaces. By maintaining the address space model, existing OS and driver software will run in a PCI Express system without any modifications. In other words, PCI Express is software backward compatible with PCI and PCI-X systems. In fact a PCI Express system will boot an existing OS with no changes to current drivers and application programs. Even PCI/ACPI power management software will still run.”¹⁸

48. In sum, PCI Express connections are LVDS channels that convey data bits, address bits, and byte enable information bits of a PCI bus transaction in a serial bit stream using pairs of unidirectional, differential signal lanes to convey the information in opposite directions allowing the connection to be scalable and dramatically reducing the pin-count required for connectors, as well as other benefits. “Currently PCI Express defines the following configuration of serial links: x1, x2, x4, x8, x12, x16, and x32. ... An x2 configuration indicates two serial paths to and from a device[.]”



	Value Proposition	Benefits
I/O Simplification	<ul style="list-style-type: none"> Scalable width and frequency Higher bandwidth 	<ul style="list-style-type: none"> Superior performance Enable evolving applications
High Performance	<ul style="list-style-type: none"> Consolidate system I/O Unify proliferated segments 	<ul style="list-style-type: none"> Standard I/O modules Improve TTM and reduce TCO
Layered Architecture	<ul style="list-style-type: none"> Layered Architecture .. Longevity Reliability, Availability, Serviceability Advanced Power Management Works in existing PCI Environment 	<ul style="list-style-type: none"> Reduced returns Improved service and support Smooth software changes
Next Gen Multimedia	<ul style="list-style-type: none"> Virtual channels QoS and Isochrony 	<ul style="list-style-type: none"> Improved multimedia "Glitch less" audio and video
Ease of Use	<ul style="list-style-type: none"> New Form Factors Innovative Designs Hot Plug / Hot Swap 	<ul style="list-style-type: none"> Simple to Install / upgrade Increased miniaturization

Figure 4.1 PCI Express Benefits

Id. at 3, 50.

¹⁸ Ravi Budruk, et al., PCI EXPRESS SYSTEM ARCHITECTURE, 400, (MindShare Inc., 2004) at 11.

49. Another example of a computer-to-peripheral interconnection that embodies Dr. Chu's patented invention is the USB 3.x connection. The "Super Speed" USB 3.0 architecture uses at least two pairs of unidirectional, point-to-point differential signal paths. Each pair includes a transmit path and a receiving path, thus transmitting the USB data packet information in opposite directions.

3.1.4 USB 3.0 Architecture Summary

USB 3.0 is a dual-bus architecture that incorporates USB 2.0 and a SuperSpeed bus. Table 3-1 summarizes the key architectural differences between SuperSpeed USB and USB 2.0.

Table 3-1. Comparing SuperSpeed to USB 2.0

Characteristic	SuperSpeed USB	USB 2.0
Data Rate	SuperSpeed (5.0 Gbps)	low-speed (1.5 Mbps), full-speed (12 Mbps), and high-speed (480 Mbps)
Data Interface	Dual-simplex, four-wire differential signaling separate from USB 2.0 signaling Simultaneous bi-directional data flows	Half-duplex two-wire differential signaling Unidirectional data flow with negotiated directional bus transitions
Cable signal count	Six: Four for SuperSpeed data path Two for non-SuperSpeed data path	Two: Two for low-speed/full-speed/high-speed data path
Bus transaction protocol	Host directed, asynchronous traffic flow Packet traffic is explicitly routed	Host directed, polled traffic flow Packet traffic is broadcast to all devices.

Universal Serial Bus 3.0 Specification, Rev. 1.0 (Nov. 12, 2008), at 3.1 to 3.5. USB 3.x ports operate in conformance with all USB protocols, including USB 2.0 protocols and USB 3.0 or later protocols, which are backward compatible with the USB 2.0 protocol. In sum, USB 3.x connections are LVDS channels using two unidirectional, differential signal pairs that transmit USB protocol data packets in opposite directions.

50. The Direct Media Interface ("DMI") is similar to PCIe and implements at least four serial lanes that all use differential signaling constituting 2 transmit lanes and 2 receive lanes and, therefore, transmitting data in opposite directions. See <https://www.intel.com/content/dam/www/public/us/en/documents/white-papers/ia-introduction-basics-paper.pdf>; see also https://en.wikipedia.org/wiki/Direct_Media_Interface ("DMI shares many characteristics with PCI Express, using multiple lanes and differential signaling to form a point-to-point link.").

51. The On-Package Interface (OPI) is like DMI but is used when a CPU and system controller are integrated into a single system-on-a-chip (“SoC”). *See, e.g.,* <https://web.archive.org/web/20170106002415/https://www.anandtech.com/show/10959/intel-launches-7th-generation-kaby-lake-i7-7700k-i5-7600k-i3-7350k/5>.

52. Additional interfaces that employ LVDS channels include, but are not limited to, DisplayPort¹⁹, Embedded DisplayPort (“eDP”)²⁰, Serial-Attached SCSI (“SAS”)²¹, and Serial ATA or Serial AT Attachment (“SATA”)²².

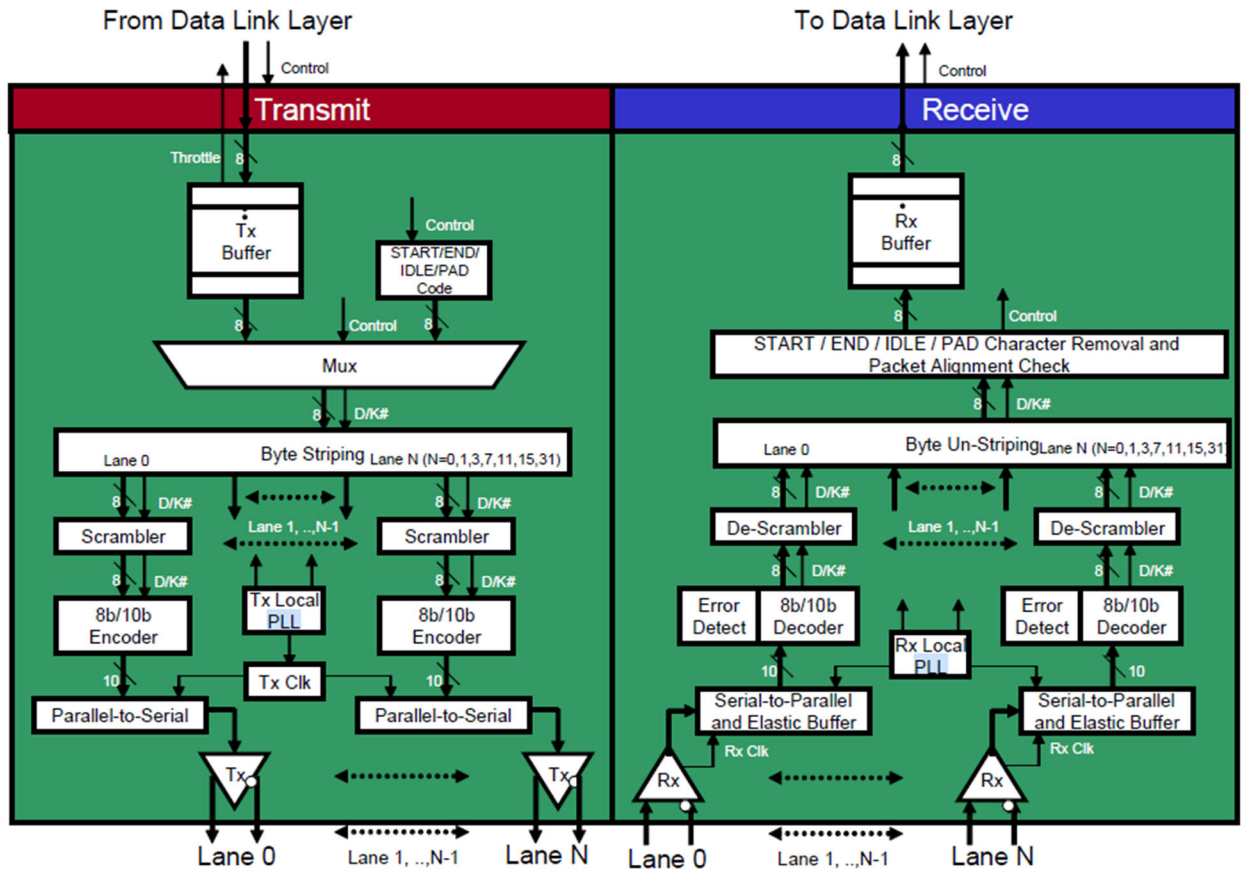
53. The physical layer of PCI Express includes PLL circuitry. *See* PCI Express Base Specification Revision 3.0, Section 1.5.3, page 49 (physical Layer “includes all circuitry for interface operation, including driver and input buffers, parallel-to-serial and serial-to-parallel conversion, PLL(s), impedance matching circuitry” as well as “logical functions related to interface initialization and maintenance”). The figure below also shows the use of PLL circuitry:

¹⁹ Tektonix, THE BASICS OF SERIAL DATA COMPLIANCE AND VALIDATION MEASUREMENTS – PRIMER, page 9.

²⁰ eDP is a display panel interface standard that defines the signaling interface between CPUs/GPUs and integrated displays. It is based on the existing DisplayPort standard. Essentially, it is an embedded version of the DisplayPort standard oriented toward applications, such as notebooks and All-In-One PCs. Like DisplayPort, it consists of the Main Link, Auxiliary channel, and an optional Hot-Plug Detect signal. *See* <https://edc.intel.com/content/www/us/en/design/ipla/software-development-platforms/client/platforms/alder-lake-desktop/12th-generation-intel-core-processors-datasheet-volume-1-of-2/003/embedded-displayport-edp/>.

²¹ HP. *Serial ATA and Serial Attached SCSI technologies*. TECHNOLOGY BRIEF, 2003, page 5. Available at <http://h10032.www1.hp.com/ctg/Manual/c00256909.pdf>.

²² HP. *Serial ATA and Serial Attached SCSI technologies*. TECHNOLOGY BRIEF, 2003, page 5. Available at <http://h10032.www1.hp.com/ctg/Manual/c00256909.pdf>; Tektonix, THE BASICS OF SERIAL DATA COMPLIANCE AND VALIDATION MEASUREMENTS – PRIMER, page 9.



Ravi Budruk, *et al.*, PCI EXPRESS SYSTEM ARCHITECTURE, 454, (MindShare Inc., 2004), page 401.

54. Each claim of the ACQIS Patents is a patentable, valid and enforceable invention that is novel and non-obvious over the prior art.

55. ACQIS has not authorized or licensed Fujitsu to practice any of the inventions claimed in the ACQIS Patents with respect to the products accused of infringement in this Complaint.

Fujitsu's Infringing Products

56. Fujitsu has directly infringed one or more claims of each of the ACQIS Patents under at least 35 U.S.C. §§ 271(a) and (g), by making, using, offering to sell, and/or selling within the United States, and/or importing into the United States, computer products that embody the claimed inventions of Dr. Chu, and/or by importing into, and/or using, offering to

sell, and/or selling in, the United States computer products that were made abroad using patented processes claimed in the ACQIS Patents.

57. Furthermore, Fujitsu has indirectly infringed one or more claims of each of the ACQIS Patents under at least 35 U.S.C. § 271(b), by inducing third parties to make, use, offer to sell, and/or sell within the United States, and/or import into the United States computer products that embody the claimed inventions of Dr. Chu, and/or by importing into, and/or using, offering to sell, and/or selling in, the United States computer products that were made abroad using patented processes claimed in the ACQIS Patents, with knowledge of the ACQIS Patents, knowledge that it would induce the direct infringement of others, and specific intent to cause the infringement.

58. Fujitsu makes, uses, imports, sells, and/or offers to sell a variety of non-blade server computer products in the United States that infringe one or more of the claims in the ACQIS Patents, and/or imports into, and/or using, offering to sell, and/or selling in, the United States non-blade server computer products that were made abroad using patented processes claimed in the ACQIS Patents including, without limitation, non-blade servers sold under the brand names PRIMERGY TX, PRIMERGY RX, PRIMERGY MX, and PRIMERGY CX series servers. These products are collectively referred to as the “Accused Fujitsu Products.”

59. On information and belief, Fujitsu manufactures and tests (or, pursuant to Fujitsu designs and instructions, has manufactured and tested) at least certain of the Accused Fujitsu Products abroad and uses, offers to sell, and/or sells such products in the United States, and/or imports such products into the United States (directly; through a related entity acting as Fujitsu’s agent or alter-ego or third party acting as Fujitsu’s agent; or indirectly, such as by inducing the actions of a third party).

60. On information and belief, at least certain of the Accused Fujitsu Products that Fujitsu imports into the United States (directly, through its agents or alter egos, and/or indirectly) are manufactured outside the United States using one or more processes claimed in the ACQIS Patents.

61. The Accused Fujitsu Products include products made, used, offered for sale, sold within the United States, and/or imported into the United States, at least since ACQIS provided Fujitsu actual notice of its infringement on or around May 15, 2018.

62. The Accused Fujitsu Products also include products made using the processes claimed in the ACQIS Patents and imported into the United States within the six years preceding the date of this Complaint.

63. The Accused Fujitsu Products also include products that are used to perform one or more methods claimed in the ACQIS Patents within the six years preceding the date of this Complaint.

64. The Accused Fujitsu Products also include any product made, used, offered for sale, sold within the United States, and/or imported into the United States, from December 22, 2017 to the termination date of each respective patent, which incorporates PCI Express, USB 3.0 or later, and/or substantially similar communication channels (*e.g.*, Intel OPI and/or DMI channels) to the extent such product was not made, used, offered for sale, sold within the United States, and/or imported into the United States by FCCL.

65. On information and belief, all of the Accused Fujitsu Products are configured and operate in substantially the same way as explained below using the PRIMERGY TX1310 M3 server as an example for illustrative purposes.

66. The PRIMERGY TX1310 M3 is a computer.



<https://web.archive.org/web/20171205202232/https://www.fujitsu.com/global/products/computing/servers/primergy/tower/tx1310m3/index.html>.

67. The PRIMERGY TX1310 M3 includes Intel® Xeon processors, which have integrated interface controllers on a single chip, such as to drive the PCIe channels connected to the processor.

Processor	Intel® Xeon® processor E3-1200 v6 product family, Intel® Celeron® processor, Intel® Core™ i3 processor, Intel® Pentium® processor 1 x Intel® Xeon® processor E3-1200 v6 product family, Intel® Celeron® processor, Intel® Core™ i3 processor, Intel® Pentium® processor
PCI-Express 3.0 x4 (mech. x16)	1 x Full height, up to 215 mm length
PCI-Express 3.0 x16	1 x Full height, up to 240 mm length

<https://web.archive.org/web/20171205202232/https://www.fujitsu.com/global/products/computing/servers/primergy/tower/tx1310m3/index.html>.

68. These processors are the Intel® Xeon® Processor E3 v6 Family, also known as the “Kaby Lake” family of processors. *See, e.g.,* <https://ark.intel.com/content/www/us/en/ark/products/97470/intel-xeon-processor-e3-1220-v6-8m-cache-3-00-ghz.html> (specifications for the Intel® Xeon® Processor E3 v6 Family, and identifying them as products formerly known as “Kaby Lake”); <https://ark.intel.com/content/www/us/en/ark/products/codename/82879/products-formerly-kaby-lake.html> (identifying processors that fall within this family).

69. On information and belief, the PRIMERGY TX1310 M3 is configured with a variety of connectors that can couple the CPU to a variety of consoles, including USB 3.x.



Drives (optional)	DVD supermulti, ultraslim , SATA I RDX Drive, 100 MB/s, 320 GB, 500 GB, 1 TB, 2 TB, USB 3.0
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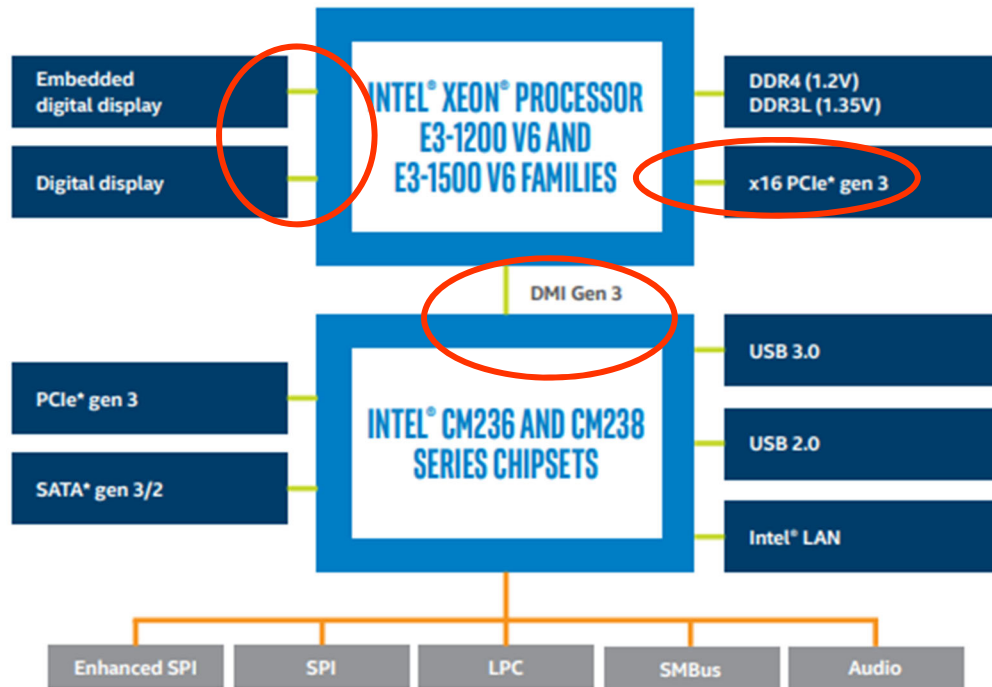
PRIMERGY PGRA CP NVIDIA® NVS™ 315 1GB VGA PCIe x16



The NVIDIA® NVS™ 315 graphic card delivers exceptional flexibility and compatibility that lets you get the most from your existing display infrastructure. Drive all your DisplayPort, DVI, and VGA displays, regardless of display connectivity or chassis size. Gather insights faster from an expanded workspace of multiple high-resolution displays and get three times more graphics cores than previous-generation NVS solutions for significantly improved visualization. Plus, take advantage of 1 GB of on-board frame buffer memory to interact with more visually compelling content on larger, high-resolution displays.

<https://web.archive.org/web/20171205202232/https://www.fujitsu.com/global/products/computing/servers/primergy/tower/tx1310m3/index.html>.

70. On information and belief, the Intel processors employed in the PRIMERGY TX1310 M3 connect directly to a variety of LVDS channels that convey data bits in a serial stream using unidirectional pairs of lanes transmitting data in opposite direction, including Intel's DMI and PCIe channels, and the directly-connected PCIe channels connect the CPU to a graphics processor.



Intel® Xeon® Processor E3-1200 v6 and E3-1500 v6 Product Families

Platform Brief, available at <https://cdrdv2-public.intel.com/335409/xeon-processor-e3-1500-v6-workstation-iot-platform-brief.pdf>.

71. The Intel processors employed in the PRIMERGY TX1310 M3 also connect to LVDS channels that convey USB data packets through pairs of unidirectional differential signal paths in opposite directions—USB 3.x ports. *See id.; see also supra*, <https://web.archive.org/web/20171205202232/https://www.fujitsu.com/global/products/computing/servers/primergy/tower/tx1310m3/index.html>;

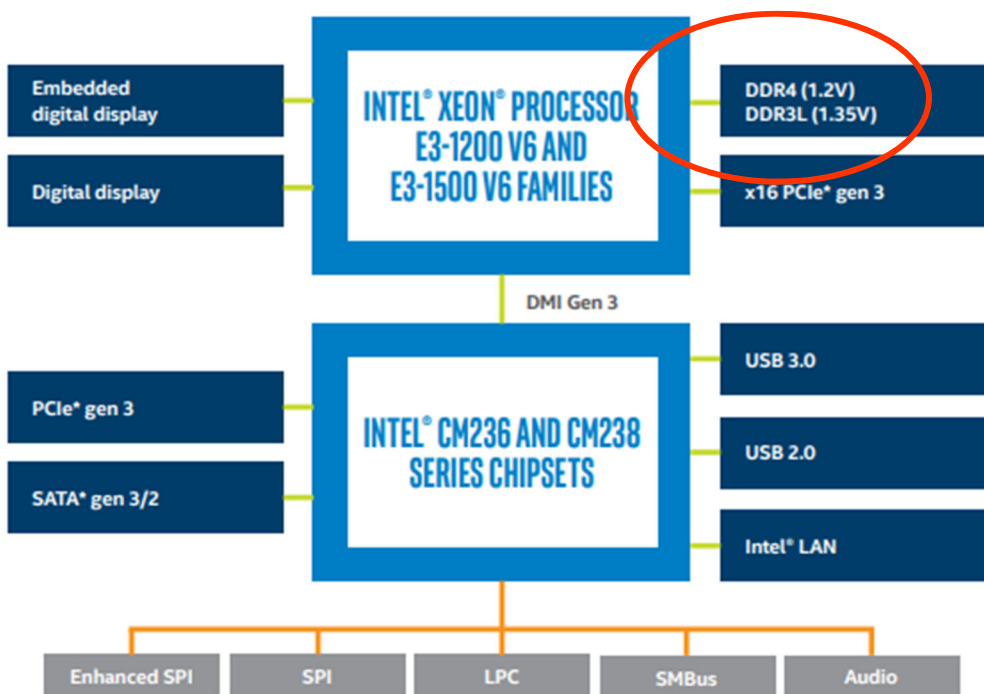
HSIO: Increases flexibility from 18 to 26 total HSIO ports,⁷ from up to 8 PCIe 2.0 to 20 PCIe 3.0 ports,⁸ and from up to 6 USB 3.0 to 10 USB 3.0 ports.⁹

<https://cdrdv2-public.intel.com/335409/xeon-processor-e3-1500-v6-workstation-iot-platform-brief.pdf>.

72. The PRIMERGY TX1310 M3 has DDR4 system memory connected directly to the CPU.

Memory	4 GB - 64 GB, DIMM (DDR4) 4 GB - 32 GB, DIMM (DDR4)
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<https://web.archive.org/web/20171205202232/https://www.fujitsu.com/global/products/computing/servers/primergy/tower/tx1310m3/index.html>.



Intel® Xeon® Processor E3-1200 v6 and E3-1500 v6 Product Families

Platform Brief, available at <https://cdrdv2-public.intel.com/335409/xeon-processor-e3-1500-v6-workstation-iot-platform-brief.pdf>.

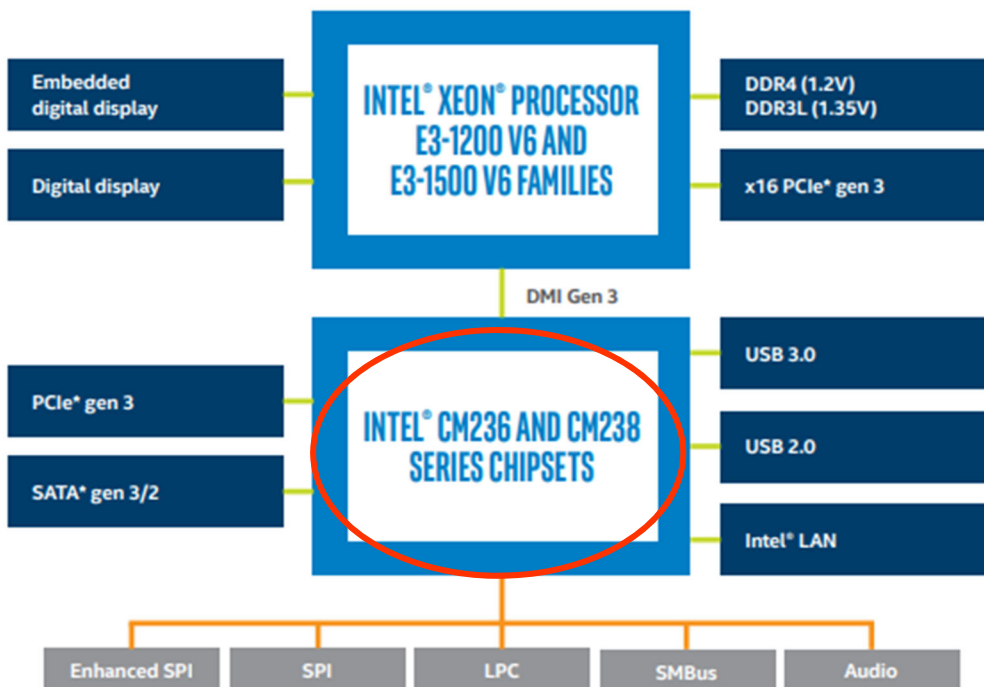
73. On information and belief, the PRIMERGY TX1310 M3 has a mass storage SSD coupled to the CPU through the PCIe interfaces that are directly connected to the CPU.

essential computing needs. Its compact new chassis offers the right mix of storage and scalability for essential SME workloads at the right price, with support for up to four 3.5-inch storage drives (40TB max.) and four PCIe Gen3 slots. The server is also easy to service with a screw-less chassis and

PCI-Express 3.0 x4 (mech. x16)	1 x Full height, up to 215 mm length
PCI-Express 3.0 x16	1 x Full height, up to 240 mm length

<https://web.archive.org/web/20171205202232/https://www.fujitsu.com/global/products/computing/servers/primergy/tower/tx1310m3/index.html>.

The Intel processors used in the PRIMERGY TX1310 M3 have a peripheral bridge called the C236 series chipset PCH connected to the CPU via the DMI, which has an integrated controller.



Intel® Xeon® Processor E3-1200 v6 and E3-1500 v6 Product Families

Platform Brief, available at <https://cdrdv2-public.intel.com/335409/xeon-processor-e3-1500-v6-workstation-iot-platform-brief.pdf>.

CPU Interface	DMI Gen3 x4
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Intel® 200 (Including X299) and Intel® Z370 Series Chipset and Families Platform Controller

Hub (PCH) Datasheet Vol. 1 of 2, p. 19²³ (Oct. 2017 Doc. No. 335192-003), *available at* <https://www.intel.com/content/www/us/en/content-details/335192/intel-200-series-chipset-family-platform-controller-hub-pch-datasheet-volume-1-of-2.html>.

74. The Intel C236 series PCH used in the PRIMERGY TX1310 M3 has an Integrated Clock Controller (ICC) that includes PLL circuitry, which generates different clock frequencies to convey the PCI bus transactions and USB transactions through the PCIe and USB channels based on the different clock frequencies.

25.1 Overview

Platform Controller Hub (PCH) based platforms require several single-ended and differential clocks to synchronize signal operations and data propagations system wide between many interfaces and across multiple clock domains. The PCH generates and provides this complete system clocking solution through its Integrated Clock Controller (ICC).

25.2 PCH ICC Clocking Profiles

The PCH ICC hardware includes the following clocking profiles:

- "Standard" Profile (See [Figure 25-1](#))
 - BCLK PLL = Disabled
 - USBPCIE PLL = Enabled with Down Spread Spectrum Clocking (SSC) Capability
- "Adaptive" Profile ([Figure 25-2](#))
 - BCLK PLL = Enabled with Down Spread Spectrum Clocking (SSC) and Under Clocking Capability
 - USBPCIE PLL = Enabled with Down Spread Spectrum Clocking (SSC) Capability
- "Over Clocking" Profile ([Figure 25-2](#))
 - BCLK PLL = Enabled with Down Spread Spectrum Clocking (SSC) and Over Clocking Capability
 - USBPCIE PLL = Enabled with Down Spread Spectrum Clocking (SSC) Capability

These PCH ICC Clocking Profiles can be enabled through the Intel® Flash Image Tool. Refer details in the Intel® ME User's Guide within the Intel® ME FW Kit for steps on using the Intel® Flash Image Tool (FIT) tool. [Table 25-1](#) documents the supported ICC Clocking Profiles per PCH SKU.

The Standard ICC Profile is set by default and is the recommended ICC Clocking Profile.

Id. at p. 176.

²³ Page number references correspond to page numbers in PDF document.

75. The Intel Xeon processor used in the PRIMERGY TX1310 M3 also has integrated clock circuitry that includes PLL circuitry, which generates different clock frequencies to convey the PCI bus transactions through the PCIe channels based on the different clock frequencies.

6.7 Processor Clocking Signals

Table 6-10. Processor Clocking Signals

Signal Name	Description	Dir.	Buffer Type	Link Type	Availability
BCLKP BCLKN	100 MHz Differential bus clock input to the processor	I		Diff	Processor Line
CLK24P CLK24N	24 MHz Differential bus clock input to the processor	I		Diff	
PCI_BCLKP PCI_BCLKN	100 MHz Clock for PCI Express* logic	I		Diff	

Intel® Xeon® Processor E3-1200 v6 Product Family for S Platforms Datasheet, Vol. 1 of 2, p. 106 (Jan. 2018 Doc. No. 3335695-001US), available at <https://www.intel.co.uk/content/dam/www/public/us/en/documents/datasheets/xeon-e3-1200v6-vol-1-datasheet.pdf>.

76. In view of the foregoing facts concerning the technical features and functionalities of the Accused Fujitsu Products (*see* paragraphs 65-75), when Fujitsu or another party manufactures the Accused Fujitsu Products, it improves the speed and performance of the peripheral data communication in its computer products by using a method of manufacturing that includes the following steps: (a) connecting a CPU directly to a peripheral bridge on a printed circuit board; (b) directly connecting to the peripheral bridge one or more LVDS channels with pairs of unidirectional lanes that convey data in serial bit streams in opposite directions; and (c) providing a connector with an LVDS channel to facilitate data communication with external peripherals using two unidirectional serial lanes to transmit data in opposite directions, including USB protocol data.

77. On information and belief, Fujitsu or another party performs the foregoing manufacturing steps outside the United States to make at least certain of the Accused Fujitsu Products, and Fujitsu (directly or through a subsidiary acting as its agent or alter ego, or a third party acting as its agent) then imports those Accused Fujitsu Products into the United States to be marketed and sold.

78. Through making, using, selling, and/or offering for sale in the United States, and/or importing into the United States, the Accused Fujitsu Products with the features and functionalities alleged above, Fujitsu has infringed one or more of the claims in each of the ACQIS Patents.

79. Fujitsu's infringing conduct has caused injury and damage to ACQIS and ACQIS' licensees.

Fujitsu Knew of the ACQIS Patents and its Infringement, and ACQIS Provided Fujitsu Actual Notice of its Infringement

80. On April 2, 2009, ACQIS filed suit in the Federal District Court for the Eastern District of Texas against Fujitsu America, Inc. and other parties for infringement of certain of its patents directed to blade server technology. *See ACQIS LLC v. APPRO INT'L, INC.*, No. 6:09-cv-00148-LED (E.D. Tex.), dkt. 1.

81. On June 14, 2010, ACQIS and Fujitsu America, Inc. jointly filed a stipulated motion for dismissal of Fujitsu America, Inc. in view of settlement of the parties' dispute with respect to blade servers. *See id.*, dkt. 273; <https://www.law360.com/articles/175004/fujitsu-reaches-deal-in-acqis-blade-server-ip-spat>.

82. On information and belief, Fujitsu was aware of and involved in the settlement of this dispute on behalf of its subsidiary Fujitsu America, Inc., and it knew of ACQIS's patent portfolio, including pending and later-filed family members.

83. On or around May 15, 2018, ACQIS notified Fujitsu, pursuant to 35 U.S.C. § 287(a), of all of the ACQIS Patents and Fujitsu's infringement thereof based on the Accused Fujitsu Products by way of a letter to Fujitsu America, Inc. Fujitsu America, Inc. operates as Fujitsu's agent for service of notification of infringement of U.S. patents, and/or acts in Fujitsu's stead in the U.S. and as Fujitsu's alter ego such that notification of infringement to Fujitsu America, Inc. constitutes notification to Fujitsu. Furthermore, on information and belief, Fujitsu America, Inc. notified Fujitsu of ACQIS's letter and/or provided ACQIS's letter to Fujitsu.

84. ACQIS's letter described the enforcement history of ACQIS's patent portfolio, noting its prior lawsuit enforcing ACQIS Patents directed to blade server products and which are related to the presently-asserted ACQIS Patents. ACQIS identified both that this prior lawsuit resulted in a significant jury verdict against IBM and that Fujitsu America, Inc. settled with ACQIS. ACQIS' letter identified all of the ACQIS Patents asserted herein and described the applicability of the ACQIS Patents to Fujitsu's non-blade server computer products, including PRIMERGY TX, PRIMERGY RX, PRIMERGY MX, and PRIMERGY CX.

85. ACQIS invited Fujitsu to discuss potential licensing arrangements to allow Fujitsu to continue to utilize the patented technologies in the ACQIS patent portfolio, including the ACQIS Patents, beyond blade server products.

86. Fujitsu did not respond to ACQIS's May 15, 2018 letter and continued to make, import, and/or sell, and/or induce others to do the same, the Accused Fujitsu Products identified in ACQIS's letter in willful violation of ACQIS' patent rights, or at the very least in reckless disregard of ACQIS' patent rights.

87. Upon receiving actual notice of the ACQIS Patents and how they apply to Fujitsu's computer products, Fujitsu at the very least ignored the notice and chose to remain willfully blind to its own infringement.

88. Fujitsu's choice to ignore ACQIS, the ACQIS Patents, and ACQIS' offer to engage in a licensing arrangement for non-blade server computer products, and instead to continue making and selling the infringing Accused Fujitsu Products, is egregious and exceptional.

89. Fujitsu's conduct constitutes willful infringement of the ACQIS Patents, beginning at least as early as May 15, 2018.

Fujitsu's Indirect Infringement

90. Fujitsu indirectly infringes the ACQIS Patents under 35 U.S.C. §§ 271(b) and (c) by inducing third parties, such as importers, resellers, customers, and end users, to directly infringe the ACQIS Patents by using, offering for sale, selling and/or importing the Accused Fujitsu Products in this District and elsewhere in the United States and by importing into the United States and selling the Accused Fujitsu Products despite knowledge that those products are material parts of a computer system, and are not staple articles of commerce with substantial non-infringing uses. For example, Fujitsu Accused Products are offered for sale and sold in this District and elsewhere in the United States through retailers and other sellers.

91. Fujitsu took affirmative acts to induce third parties to commit those direct infringing acts. Fujitsu did so by, at least, actively promoting the Accused Fujitsu Products for the U.S. market. For example, on information and belief, for every one of the Accused Fujitsu Products sold in the United States, Fujitsu pursues and obtains approval from U.S. and state regulatory agencies to allow sales of such Accused Fujitsu Products in the United States. Fujitsu competes for business in the United States (including by advertising). Fujitsu's website offers support for

US consumers of the Accused Products by offering US-based support website at <https://www.fujitsu.com/us/support>.

92. Fujitsu has taken these acts despite knowledge of the ACQIS Patents and the infringement by the Accused Fujitsu Products, Fujitsu knows and specifically intends that its customers will sell the infringing Accused Fujitsu Products in the United States or cause the Accused Fujitsu Products to be sold in the United States.

93. Fujitsu's customers directly infringe the ACQIS Patents by importing the Accused Fujitsu Products into the United States, offering to sell and selling the Accused Fujitsu Products in the United States, and using the Accused Fujitsu Products in the United States.

94. Fujitsu further induces direct infringement of the ACQIS Patents by providing instruction and direction to end users of the Accused Fujitsu Products about how to use the Accused Fujitsu Products in a manner that infringes one or more claims of the ACQIS Patents. Fujitsu knows and specifically intends that end users will use the Accused Fujitsu Products in an infringing manner as directed by Fujitsu. On information and belief, Fujitsu has configured the Accused Fujitsu Products in such a manner that direct infringing use necessarily occurs upon operation of the Accused Fujitsu Products in their normal, intended manner without any specific action of the end user other than turning on the product.

95. Fujitsu has induced others' direct infringement as stated above despite actual notice that the Accused Fujitsu Products infringe the ACQIS Patents, as set forth herein. Fujitsu therefore has caused others, including its purchasers and end users, to directly infringe the ACQIS Patents with knowledge of the ACQIS Patents and with the specific intent, or at the very least willful blindness, that others, including the purchasers and end users, will directly infringe. Fujitsu knew

the acts it induced (such as importation, retail sales in the United States, and use by consumers in the United States) constituted infringement.

COUNT I INFRINGEMENT OF U.S. PATENT NO. 9,529,768

96. ACQIS incorporates by this reference the allegations set forth in paragraphs 1-95 of this Complaint in support of its first cause of action as though fully set forth herein.

97. Pursuant to 35 U.S.C. § 282, the claims of the '768 patent are presumed valid.

98. In view of the foregoing facts and allegations, including paragraphs **Error! Reference source not found.**-79 above, Fujitsu has directly infringed one or more claims of the '768 patent in violation of 35 U.S.C. § 271(a) by making, using, selling, offering to sell, and/or importing the Accused Fujitsu Products; has induced its customers or end-users to infringe one or more claims of the '768 patent in violation of 35 U.S.C. § 271(b); and/or has contributed to the infringement of one or more claims of the '768 patent in violation of 35 U.S.C. § 271(c).

99. Fujitsu's infringement of the '768 patent through its manufacture, use, offers to sell, and/or sales in, and/or importation into, the United States of, and/or Fujitsu's inducement and/or contributory infringement in connection with, the Accused Fujitsu Products is shown by way of the exemplary PRIMERGY TX1310 M3 server as set forth in paragraphs 65-79 above, which demonstrates infringement of at least claim 13 of the '768 patent by showing:

- (a) the PRIMERGY TX1310 M3 is a computer;
- (b) the PRIMERGY TX1310 M3 has an integrated central processing unit (CPU) and interface controller in a single chip, because the PRIMERGY TX1310 M3 uses Intel® Xeon processors, which include interface controllers (*e.g.*, to drive PCIe channels) and the CPU integrated as a single chip;
- (c) the PRIMERGY TX1310 M3 has a first LVDS channel directly extending from the

interface controller to convey address and data bits of a PCI bus transaction in a serial bit stream, wherein the first LVDS channel comprises first unidirectional, multiple, differential signal pairs to convey data in a first direction and second unidirectional, multiple, differential signal pairs to convey data in a second, opposite direction opposite directions through different numbers of differential signal pairs, because the Intel® Xeon processors employed in the PRIMERGY TX1310 M3 include PCIe channels directly extending from the interface controller;

- (d) the PRIMERGY TX1310 M3 has system memory directly coupled to the integrated CPU and interface controller, because the Intel® Xeon processors employed in the PRIMERGY TX1310 M3 are directly coupled to DDR4 system memory.

100. On information and belief, the Accused Fujitsu Products are in relevant part substantially similar to the exemplary PRIMERGY TX1310 M3, in particular with regard to the manner in which the Accused Fujitsu Products include and utilize PCIe and/or USB 3.x functionality. This Section is thus illustrative of the manner in which Fujitsu infringes the claims of the '768 patent as to each of the Accused Fujitsu Products.

101. ACQIS' infringement allegations against the Accused Fujitsu Products are not limited to claim 13 of the '768 patent, and additional infringed claims will be identified through infringement contentions and discovery.

102. As early as around May 15, 2018, Fujitsu had actual notice of the '768 patent and the infringement alleged herein.

103. The above-described acts of infringement committed by Fujitsu have caused injury and damage to ACQIS and ACQIS' licensees.

104. ACQIS is entitled to recover all damages sustained as a result of Fujitsu's wrongful acts of infringement, but in no event less than a reasonable royalty pursuant to 35 U.S.C. § 284.

105. Fujitsu's infringement as described herein has been willful and exceptional. Accordingly, ACQIS is entitled to recover enhanced damages up to three times the amount found or assessed at trial pursuant to 35 U.S.C. § 284, as well as its attorneys' fees pursuant to 35 U.S.C. § 285.

COUNT II INFRINGEMENT OF U.S. PATENT NO. 9,703,750

106. ACQIS incorporates by this reference the allegations set forth in paragraphs 1-95 of this Complaint in support of its second cause of action as though fully set forth herein.

107. Pursuant to 35 U.S.C. § 282, the claims of the '750 patent are presumed valid.

108. In view of the foregoing facts and allegations, including paragraphs **Error! Reference source not found.**-79 above, Fujitsu has directly infringed one or more claims of the '750 patent in violation of 35 U.S.C. § 271(a) by making, using, selling, offering to sell, and/or importing the Accused Fujitsu Products; has induced its customers or end-users to infringe one or more claims of the '750 patent in violation of 35 U.S.C. § 271(b); and/or has contributed to the infringement of one or more claims of the '750 patent in violation of 35 U.S.C. § 271(c).

109. Fujitsu's infringement of the '750 patent through its manufacture, use, offers to sell, and/or sales in, and/or importation into, the United States of, and/or Fujitsu's inducement and/or contributory infringement in connection with, the Accused Fujitsu Products is shown by way of the exemplary the Accused Fujitsu Products is shown by way of the exemplary PRIMERGY TX1310 M3 server as set forth in paragraphs 65-79 above, which demonstrates infringement of at least claim 1 of the '750 patent by showing:

(a) the PRIMERGY TX1310 M3 is a computer;

- (b) the PRIMERGY TX1310 M3 has an integrated central processing unit (CPU) and interface controller in a single chip, because the PRIMERGY TX1310 M3 uses Intel® Xeon processors, which include interface controllers (*e.g.*, to drive PCIe channels) and the CPU integrated as a single chip;
- (c) the PRIMERGY TX1310 M3 has a first LVDS channel directly extending from the interface controller to convey address bits, data bits, and byte enable information bits of a PCI bus transaction in a serial bit stream, wherein the first LVDS channel comprises a first unidirectional, differential signal pair to convey data in a first direction and a second unidirectional, differential signal pair to convey data in a second, opposite direction, because the Intel® Xeon processors employed in the PRIMERGY TX1310 M3 include PCIe channels directly extending from the interface controller;
- (d) the PRIMERGY TX1310 M3 has system memory directly coupled to the integrated CPU and interface controller, because the Intel® Xeon processors employed in the PRIMERGY TX1310 M3 are directly coupled to DDR4 system memory.

110. On information and belief, the Accused Fujitsu Products are in relevant part substantially similar to the exemplary PRIMERGY TX1310 M3, in particular with regard to the manner in which the Accused Fujitsu Products include and utilize PCIe and/or USB 3.x functionality. This Section is thus illustrative of the manner in which Fujitsu infringes the claims of the '750 patent as to each of the Accused Fujitsu Products.

111. ACQIS' infringement allegations against the Accused Fujitsu Products are not limited to claim 1 of the '750 patent, and additional infringed claims will be identified through infringement contentions and discovery.

112. As early as around May 15, 2018, Fujitsu had actual notice of the '750 patent and the infringement alleged herein.

113. The above-described acts of infringement committed by Fujitsu have caused injury and damage to ACQIS and ACQIS' licensees.

114. ACQIS is entitled to recover all damages sustained as a result of Fujitsu's wrongful acts of infringement, but in no event less than a reasonable royalty pursuant to 35 U.S.C. § 284.

115. Fujitsu's infringement as described herein has been willful and exceptional. Accordingly, ACQIS is entitled to recover enhanced damages up to three times the amount found or assessed at trial pursuant to 35 U.S.C. § 284, as well as its attorneys' fees pursuant to 35 U.S.C. § 285.

COUNT III INFRINGEMENT OF U.S. PATENT NO. 8,756,359

116. ACQIS incorporates by this reference the allegations set forth in paragraphs 1-95 of this Complaint in support of its third cause of action as though fully set forth herein.

117. Pursuant to 35 U.S.C. § 282, the claims of the '359 patent are presumed valid.

118. In view of the foregoing facts and allegations, including paragraphs **Error! Reference source not found.**-79 above, Fujitsu has directly infringed one or more claims of the '359 patent in violation of 35 U.S.C. § 271(a) by making, using, selling, offering to sell, and/or importing the Accused Fujitsu Products; has induced its customers or end-users to infringe one or more claims of the '359 patent in violation of 35 U.S.C. § 271(b); and/or has contributed to the infringement of one or more claims of the '359 patent in violation of 35 U.S.C. § 271(c).

119. Fujitsu's infringement of the '359 patent through its manufacture, use, offers to sell, and/or sales in, and/or importation into, the United States of, and/or Fujitsu's inducement and/or contributory infringement in connection with, the Accused Fujitsu Products is shown by

way of the exemplary PRIMERGY TX1310 M3 server as set forth in paragraphs 65-79 above, which demonstrates infringement of at least claim 6 of the '359 patent by showing:

- (a) the PRIMERGY TX1310 M3 is a computer;
- (b) the PRIMERGY TX1310 M3 has a variety of connectors configured to couple to a console, including USB 3.x ports;
- (c) the PRIMERGY TX1310 M3 has a central processing unit (CPU), because the PRIMERGY TX1310 M3 uses Intel® Xeon processors;
- (d) the PRIMERGY TX1310 M3 has an LVDS channel directly extending from the CPU, comprising a first unidirectional, differential signal line pair to convey data in a first direction and a second unidirectional, differential signal line pair to convey data in a second, opposite direction, because the Intel® Xeon processors employed in the PRIMERGY TX1310 M3 include, for example, PCIe channels directly extending from them; and
- (e) the PRIMERGY TX1310 M3 has a second LVDS channel that can couple to a console through one or more USB 3.x ports, which use two sets of unidirectional, differential signal pairs to convey USB protocol data packets in opposite directions.

120. On information and belief, the Accused Fujitsu Products are in relevant part substantially similar to the exemplary PRIMERGY TX1310 M3, in particular with regard to the manner in which the Accused Fujitsu Products include and utilize PCIe and/or USB 3.x functionality. This Section is thus illustrative of the manner in which Fujitsu infringes the claims of the '359 patent as to each of the Accused Fujitsu Products.

121. ACQIS' infringement allegations against the Accused Fujitsu Products are not limited to claim 6 of the '359 patent, and additional infringed claims will be identified through infringement contentions and discovery.

122. As early as around May 15, 2018, Fujitsu had actual notice of the '359 patent and the infringement alleged herein.

123. The above-described acts of infringement committed by Fujitsu have caused injury and damage to ACQIS and ACQIS' licensees.

124. ACQIS is entitled to recover all damages sustained as a result of Fujitsu's wrongful acts of infringement, but in no event less than a reasonable royalty pursuant to 35 U.S.C. § 284.

125. Fujitsu's infringement as described herein has been willful and exceptional. Accordingly, ACQIS is entitled to recover enhanced damages up to three times the amount found or assessed at trial pursuant to 35 U.S.C. § 284, as well as its attorneys' fees pursuant to 35 U.S.C. § 285.

COUNT IV INFRINGEMENT OF U.S. PATENT NO. 8,977,797

126. ACQIS incorporates by this reference the allegations set forth in paragraphs 1-95 of this Complaint in support of its third cause of action as though fully set forth herein.

127. Pursuant to 35 U.S.C. § 282, the claims of the '797 patent are presumed valid.

128. In view of the foregoing facts and allegations, including paragraphs **Error! Reference source not found.**-79 above, Fujitsu has directly infringed one or more claims of the '797 patent in violation of 35 U.S.C. § 271(g) by importing into, or selling, offering to sell, or using in, the United States the Accused Fujitsu Products that were manufactured by one or more of the methods claimed in the '797 patent, and/or has induced its customers or end-users to infringe one or more claims of the '797 patent in violation of 35 U.S.C. § 271(b).

129. The Accused Fujitsu Products are not trivial or nonessential components of other products and are not materially changed by subsequent processes.

130. Fujitsu's infringement of the '797 patent through its importation into, and/or use, offers to sell, or sales in, the United States of, and/or Fujitsu's inducement in connection with, the Accused Fujitsu Products is shown by way of the exemplary PRIMERGY TX1310 M3 server as set forth in paragraphs 65-79 above. These paragraphs demonstrate that the PRIMERGY TX1310 M3 server was necessarily manufactured according to at least claim 36 of the '797 patent:

- (a) Fujitsu or another party performs a method of improving data throughput on a motherboard when manufacturing the PRIMERGY TX1310 M3, which contains a motherboard;
- (b) when manufacturing the PRIMERGY TX1310 M3, Fujitsu or another party mounts an integrated CPU and interface controller as a single chip on the motherboard, because the Intel processor employed in the PRIMERGY TX1310 M3 includes interface controllers (*e.g.*, to drive/control PCIe channels) and the CPU integrated as a single chip;
- (c) when manufacturing the PRIMERGY TX1310 M3, Fujitsu or another party connects an LVDS channel directly to an interface controller integrated with the CPU, which LVDS channel uses two unidirectional, serial channels to transmit data in opposite directions because the PRIMERGY TX1310 M3 has PCIe channels and a DMI interface directly connected to the interface controller;
- (d) when manufacturing the PRIMERGY TX1310 M3, Fujitsu or another party increases data throughput in the serial channels by providing each channel with multiple differential signal line pairs, because the PCIe and DMI channels have multiple pairs

of differential signal lanes;

- (e) when manufacturing the PRIMERGY TX1310 M3, Fujitsu or another party configures the interface controller to adapt to different numbers of differential signal line pairs to convey encoded address and data bits of a PCI bus transaction in serial form, because the interface controllers integrated with the CPU are configured to convey PCIe data signals through PCIe channels having differential signal line pairs; and
- (f) when manufacturing the PRIMERGY TX1310 M3, Fujitsu or another party couples the integrated CPU and interface device to a peripheral device such as a storage interface controller or a graphics processor, which is attached to the motherboard through a PCIe channel.

131. ACQIS' infringement allegations against the Accused Fujitsu Products are not limited to claim 7 of the '797 patent, and additional infringed claims will be identified through infringement contentions and discovery.

132. As early as around May 15, 2018, Fujitsu had actual notice of the '797 patent and the infringement alleged herein.

133. The above-described acts of infringement committed by Fujitsu have caused injury and damage to ACQIS and ACQIS' licensees.

134. ACQIS is entitled to recover all damages sustained as a result of Fujitsu's wrongful acts of infringement, but in no event less than a reasonable royalty pursuant to 35 U.S.C. § 284.

135. Fujitsu's infringement as described herein has been willful and exceptional. Accordingly, ACQIS is entitled to recover enhanced damages up to three times the amount found

or assessed at trial pursuant to 35 U.S.C. § 284, as well as its attorneys' fees pursuant to 35 U.S.C. § 285.

COUNT V
INFRINGEMENT OF U.S. PATENT NO. RE44,654

136. ACQIS incorporates by this reference the allegations set forth in paragraphs 1-95 of this Complaint in support of its third cause of action as though fully set forth herein.

137. Pursuant to 35 U.S.C. § 282, the claims of the '654 patent are presumed valid.

138. In view of the foregoing facts and allegations, including paragraphs **Error! Reference source not found.**-79 above, Fujitsu has directly infringed one or more claims of the '654 patent in violation of 35 U.S.C. § 271(g) by using one or more of the methods claimed in the '654 patent to manufacture the Accused Fujitsu Products and then importing, selling, offering to sell and/or using the Accused Fujitsu Products, and/or has induced its customers or end-users to infringe one or more claims of the '654 patent in violation of 35 U.S.C. § 271(b).

139. The Accused Fujitsu Products made using the methods claimed in the '654 patent are not trivial or nonessential components of other products and are not materially changed by subsequent processes.

140. Fujitsu's infringement of the '654 patent through its importation into, and/or use, offers to sell, or sales in, the United States of, and/or Fujitsu's inducement in connection with, the Accused Fujitsu Products is shown by way of the exemplary PRIMERGY TX1310 M3 server as set forth in paragraphs 65-79 above. These paragraphs demonstrate that the PRIMERGY TX1310 M3 server was necessarily manufactured according to at least claim 23 of the '654 patent:

- (a) Fujitsu or another party performs a method of increasing data communication speed of a computer when manufacturing the PRIMERGY TX1310 M3;

- (b) when manufacturing the PRIMERGY TX1310 M3, Fujitsu or another party connects a CPU directly to a peripheral bridge on a printed circuit board, because the PRIMERGY TX1310 M3 uses an Intel core CPU directly connected to the Intel PCH via a DMI connection;
- (c) when manufacturing the PRIMERGY TX1310 M3, Fujitsu or another party connects an LVDS channel directly to the peripheral bridge (PCH), which uses two unidirectional, serial channels to transmit data in opposite directions, because the PRIMERGY TX1310 M3 has PCIe channels and a DMI channel directly connected to the Intel PCH;
- (d) when manufacturing the PRIMERGY TX1310 M3, Fujitsu or another party provides a connector to connect the computer to a console, because the PRIMERGY TX1310 M3 has a variety of connector ports such as USB 3.x;
- (e) when manufacturing the PRIMERGY TX1310 M3, Fujitsu or another party provides a second LVDS channel using two unidirectional, serial channels to transmit data in opposite directions through the connector to the console, because the PRIMERGY TX1310 M3 has USB 3.x ports; and
- (f) when manufacturing the PRIMERGY TX1310 M3, Fujitsu or another party enables the transmission of USB protocol data through the second LVDS channel via a USB 3.x port and channel.

141. On information and belief, the Accused Fujitsu Products are in relevant part substantially similar to the exemplary PRIMERGY TX1310 M3, in particular with regard to the manner in which the Accused Fujitsu Products include and utilize PCIe and/or USB 3.x

functionality. This Section is thus illustrative of the manner in which Fujitsu infringes the claims of the '654 patent as to each of the Accused Fujitsu Products.

142. ACQIS' infringement allegations against the Accused Fujitsu Products are not limited to claim 23 of the '654 patent, and additional infringed claims will be identified through infringement contentions and discovery.

143. As early as around May 1, 2018, Fujitsu had actual notice of the '654 patent and the infringement alleged herein.

144. The above-described acts of infringement committed by Fujitsu have caused injury and damage to ACQIS and ACQIS' licensees.

145. ACQIS is entitled to recover all damages sustained as a result of Fujitsu's wrongful acts of infringement, but in no event less than a reasonable royalty pursuant to 35 U.S.C. § 284.

146. Fujitsu's infringement as described herein has been willful and exceptional. Accordingly, ACQIS is entitled to recover enhanced damages up to three times the amount found or assessed at trial pursuant to 35 U.S.C. § 284, as well as its attorneys' fees pursuant to 35 U.S.C. § 285.

JURY TRIAL DEMANDED

ACQIS LLC hereby demands a trial by jury on all claims and issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff ACQIS LLC respectfully requests that this Court grant the following relief to ACQIS LLC:

A. enter judgment that Fujitsu has infringed one or more claims of each of the ACQIS Patents through: (1) the manufacture, use, offering to sell, and/or sale in the United States, and/or the importation into the United States, of infringing Fujitsu computer

products; (2) the practice of claimed methods of the ACQIS Patents by manufacturing, using, and/or testing Fujitsu computer products in the United States; (3) the importation into the United States of Fujitsu computer products made abroad using patented processes claimed in the ACQIS Patents; (4) inducing third parties to directly infringe; and (5) contributory infringement.

B. enter judgement that such infringement is willful;

C. enter judgment awarding ACQIS monetary relief pursuant to 35 U.S.C. § 284 in an amount adequate to compensate for Fujitsu’s infringement of the ACQIS Patents to be determined at trial, but not less than a reasonable royalty, awarding ACQIS all pre- and post-judgment interest and costs, and awarding ACQIS enhanced damages for Fujitsu’s willful infringement of the ACQIS Patents;

D. enter an order, pursuant to 35 U.S.C. § 285, declaring this an exceptional case and awarding to ACQIS its reasonable attorneys’ fees; and

E. enter an order awarding to ACQIS such other and further relief, whether at law or in equity, that this Court seems just, equitable, and proper.

Dated: April 29, 2024.

Respectfully submitted,

By: /s/ Paige Arnette Amstutz

Paige Arnette Amstutz
Texas State Bar No. 00796136
Scott Douglass & McConnico LLP
303 Colorado Street, Suite 2400
Austin, Texas 78701
Telephone: (512) 495-6300
Facsimile: (512) 495-6399
Email: pamstutz@scottdoug.com

Case Collard
Colo. Reg. No. 40692
Gregory S. Tamkin (*WD TX Admission Pending*)
Colo. Reg. No. 27105
Dorsey & Whitney LLP
1400 Wewatta Street, Suite 400
Denver, Colorado 80202
Telephone: (303) 629-3400
Facsimile: (303) 629-3450
Email: collard.case@dorsey.com
Email: tamkin.greg@dorsey.com

CERTIFICATE OF SERVICE

Pursuant to the Federal Rules of Civil Procedure and Local Rule CV-5, I hereby certify that, on April 29, 2024, all counsel of record who have appeared in this case are being served with a copy of the foregoing via the Court's CM/ECF system.

/s/ Paige Arnette Amstutz
Paige Arnette Amstutz